

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

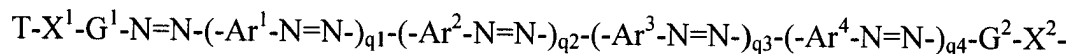
LISTING OF CLAIMS:

1. (currently amended): A polymerizable dichroic azo dye of the general formula I:

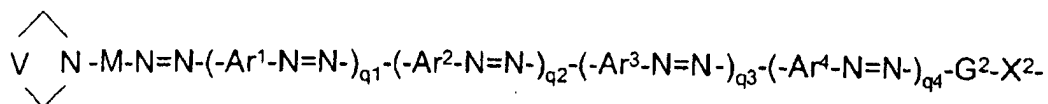


wherein:

A is a dichroic residue represented by formulae IIIa or IIIb:



IIIa



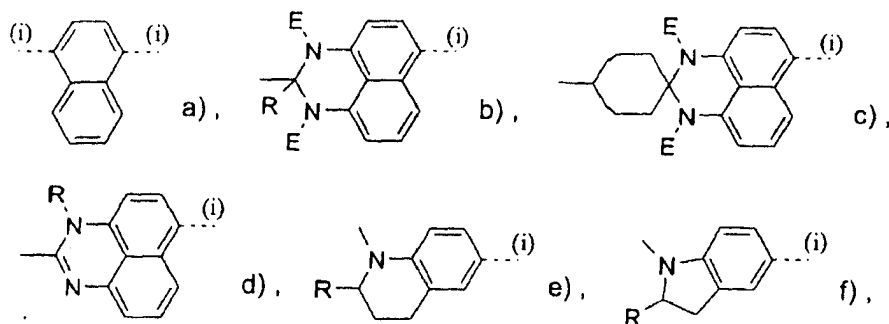
wherein

Ar^1, Ar^2, Ar^3, Ar^4 independently of each other are 1,4-phenylene, 1,4- or 1,5-naphthylene, which are unsubstituted, mono- or poly-substituted by fluorine, chlorine, hydroxy, $-NR^1R^2$ or by a straight chain or branched alkyl residue having 1-10 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by

fluorine, and wherein one or more of the non-adjacent CH₂ groups may independently be replaced by Q, wherein Q represents -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR-, -NR-CO-, -CO-NR-, -NR-CO-O-, -O-CO-NR-, -NR-CO-NR-, -CH=CH-, -C≡C-, or -O-CO-O-, wherein R represents hydrogen or a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms, and R¹ and R² independently represent hydrogen or a straight chain or branched chain hydrocarbon radical having 1 to 6 carbon atoms;

q¹, q², q³, q⁴ independently are 0 or 1, and wherein the sum of the integers q¹ + q² + q³ + q⁴ is 1 or 2;

G¹, G² represent independently of each other 1,4-phenylene or a group of formula a) to f)



which are unsubstituted, mono- or poly-substituted by fluorine, chlorine, hydroxy, -NR¹R² or by a straight chain or branched alkyl residue having 1-10 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by fluorine, and wherein one or more of the non-adjacent CH₂ groups independently from each other may optionally be replaced by -O-, -CO-O-, -O-CO-, -NR¹-CO-, -CO-NR¹-, -NR¹-CO-O-, -O-CO-NR¹-, -CH=CH-, -C≡C-, -O-CO-O-, wherein R¹

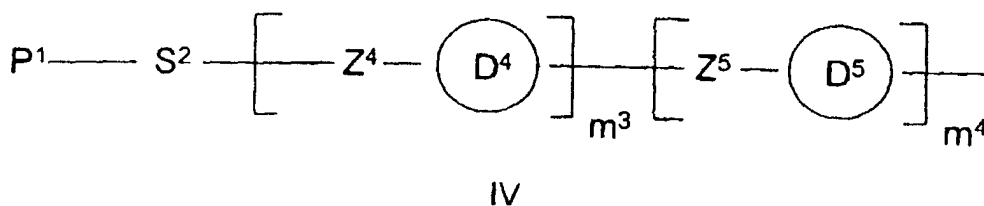
and R^2 independently represent hydrogen or a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms and wherein the broken line (i) symbolizes the possible linkages to the azo-binding group and wherein

R represents hydrogen or a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms;

E each independently represents hydrogen, a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms, or acetyl, propionyl, butyryl, isobutyryl, or a polymerizable group selected from acryloyl or methacryloyl;

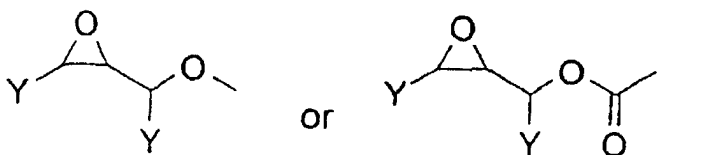
M represents 1,4-phenylene, 1,4-naphthylene which are unsubstituted, mono- or poly-substituted by fluorine, chlorine, hydroxy, $-NR^1R^2$ or by a straight chain or branched alkyl residue having 1-10 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by fluorine, and wherein one or more of the non-adjacent CH_2 groups independently from each other may optionally be replaced by $-O-$, $-CO-O-$, $-O-CO-$, $-NR^1-CO-$, $-CO-NR^1-$, $-NR^1-CO-O-$, $-O-CO-NR^1-$, $-CH=CH-$, $-C\equiv C-$, $-O-CO-O-$, wherein R^1 and R^2 independently represent hydrogen or a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms;

T represents a group of substructure IV



wherein

P¹ represents hydrogen, halogeno, cyano, nitro or a polymerizable group PG; which is CH₂=CY-, CH₂=CY-COO-, CH₂=CH-CO-NH-, CH₂=C(Ph)-CO-NH-, CH₂=CH-O-, CH₂=CH-OOC-, Ph-CH=CH-, CH₂=CH-Ph-, CH₂=CH-Ph-O-, CH₂=CH-Ph-OCO-, R³-Ph-CH=CH-COO-, R²-OOC-CH=CH-Ph-O-, N-maleinimidyl,



wherein Y each independently represents hydrogen, chloro or methyl, R² is hydrogen or straight chain or branched hydrocarbonoxy radicals having 1 to 6 carbon atoms, Ph- is phenyl and -Ph- is 1,4-phenylene,

S² represents a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted by cyano or halogeno, or poly-substituted by halogeno, having 1 to 24 carbon atoms, wherein one or more of the non-adjacent CH₂ groups independently from each other may optionally be replaced by Q, wherein Q has the meaning given above and such that heteroatoms are not directly linked to each other;

Z⁴, Z⁵ each independently represent a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted by cyano or halogeno, or poly-substituted by halogeno, having 1 to 8 carbon atoms, wherein one or more of the non-adjacent CH₂ groups independently from each other may

be optionally replaced by Q or -CR=C-CO-, wherein Q and R have the meaning given above; and

D⁴, D⁵ each independently represent an aromatic or alicyclic group, which is unsubstituted or substituted by fluorine, chlorine, cyano, nitro, or by a straight chain or branched alkyl residue having 1-10 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by fluorine, and wherein one or more of the non-adjacent CH₂ groups independently from each other may optionally be replaced by Q, wherein Q has the meaning given above;

m³ and m⁴ are independently of each other 0 or 1;

X¹, X² represent independently of each other a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted by cyano or halogeno, or poly-substituted by halogeno, having 1 to 8 carbon atoms, wherein one or more of the non-adjacent CH₂ groups independently from each other may optionally be replaced by -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NW-, -NW-CO-, -CO-NW-, -NW-CO-O-, -O-CO-NW-, -NW-CO-NW-, -CH=CH-, -C≡C-, -O-CO-O- or -CW=C-CO-,

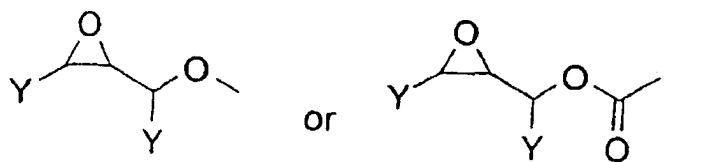
wherein W represents a group of substructure V

P²-Sp- V

wherein

P² represents hydrogen, cyano or a polymerizable group PG, which is CH₂=CY-, CH₂=CY-COO-, CH₂=CH-CO-NH-, CH₂=C(Ph)-CO-NH-, CH₂=CH-O-, CH₂=CH-OOC-, Ph-CH=CH-, CH₂=CH-Ph-, CH₂=CH-Ph-

O-, CH₂=CH-Ph-OCO-, R³-Ph-CH=CH-COO-, R²-OOC-CH=CH-Ph-O-,
N-maleinimidyl,



wherein Y each independently represents hydrogen, chloro or methyl, R² is hydrogen or a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms, R³ is hydrogen or a straight chain or branched hydrocarbonoxy radical having 1 to 6 carbon atoms, Ph- is phenyl and -Ph- is 1,4-phenylene,

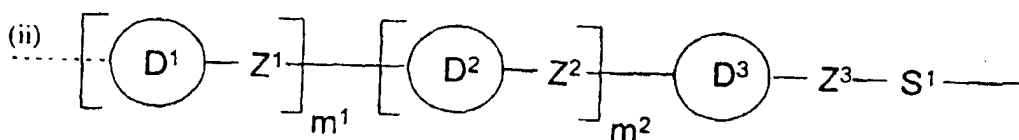
and

Sp represents a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted by cyano or halogeno, or poly-substituted by halogeno, having 1 to 5 carbon atoms, wherein one or more of the non-adjacent CH₂ groups independently from each other may optionally be replaced by -O-, -CO-, -CO-O-, -O-CO-, such that heteroatoms are not directly linked to each other;

V is selected from a group consisting of a single covalent bond, -CH₂-, -CH₂-CH₂-, -CH₂-CH₂-CH₂-, -CH₂-O-CH₂-, -CH₂-NT-CH₂-, -CH₂-(-CH₂)₂-CH₂-, wherein T has the meaning given above;

with the proviso that if G¹, G² and M are optionally substituted 1,4-phenylene, at least one of Ar¹, Ar², Ar³ or Ar⁴ is optionally substituted 1,4-naphthylene;

B represents a group of substructure II



II

wherein the broken line (ii) symbolizes the linkage to said dichroic residue and wherein:

D^1, D^2, D^3 each independently represents an aromatic or alicyclic group, which is unsubstituted or substituted by fluorine, chlorine, cyano, nitro, or by a straight chain or branched alkyl residue having 1-10 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by fluorine and wherein one or more of the non-adjacent CH_2 groups independently from each other may optionally be replaced by Q, whereby Q represents -O-, -CO-, -CO-O-, -O-CO-, -Si(CH₃)₂-O-Si(CH₃)₂-, -NR-, -NR-CO-, -CO-NR-, -NR-CO-O-, -O-CO-NR-, -NR-CO-NR-, -CH=CH-, -C≡C-, -O-CO-O- and R has the meaning given above;

S^1 represents a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted by cyano or halogeno, or poly-substituted by halogeno, having 1 to 24 carbon atoms, wherein one or more of the non-adjacent CH_2 groups independently from each other may optionally be replaced by Q, wherein Q has the meaning given above and wherein heteroatoms are not directly linked to each other;

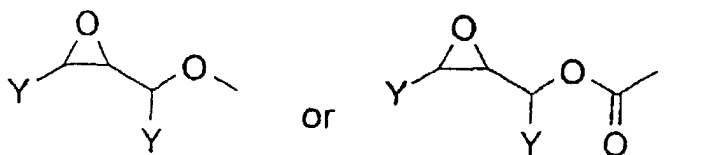
Z^1, Z^2, Z^3 each independently represents a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted by cyano or halogeno, or poly-substituted by halogeno, having 1 to 8 carbon atoms, wherein one or more of the non-adjacent CH_2 groups independently from each other may

optionally be replaced by Q or $-\text{CR}=\text{C}-\text{CO}-$, wherein Q and R have the meaning given above;

Z^3 is $-\text{O}-\text{CH}_2-$;

m^1, m^2 independently are 0 or 1; and

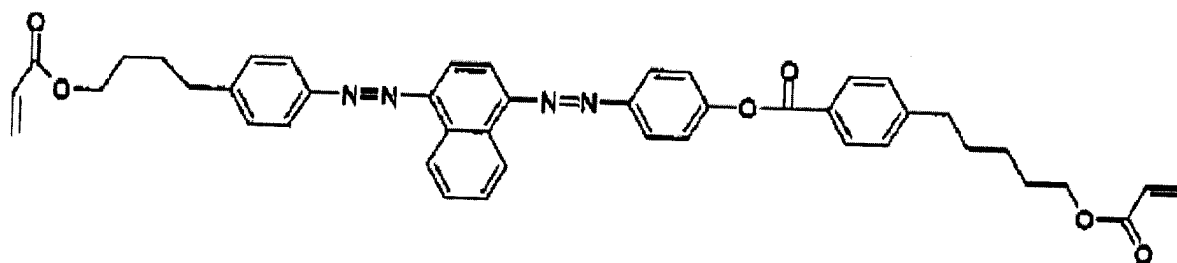
P represents hydrogen, halogeno, cyano, nitro or a polymerizable group PG, which is $\text{CH}_2=\text{CY}-$, $\text{CH}_2=\text{CY}-\text{COO}-$, $\text{CH}_2=\text{CH}-\text{CO}-\text{NH}-$, $\text{CH}_2=\text{C}(\text{Ph})-\text{CO}-\text{NH}-$, $\text{CH}_2=\text{CH}-\text{O}-$, $\text{CH}_2=\text{CH}-\text{OOC}-$, $\text{Ph}-\text{CH}=\text{CH}-$, $\text{CH}_2=\text{CH}-\text{Ph}-$, $\text{CH}_2=\text{CH}-\text{Ph}-\text{O}-$, $\text{CH}_2=\text{CH}-\text{Ph}-\text{OCO}-$, $\text{R}^3-\text{Ph}-\text{CH}=\text{CH}-\text{COO}-$, $\text{R}^2-\text{OOC}-\text{CH}=\text{CH}-\text{Ph}-\text{O}-$, N-maleinimidyl,



wherein Y each independently represents hydrogen, chloro or methyl, R^2 is hydrogen or a straight chain or branched hydrocarbon radical having 1 to 6 carbon atoms, R^3 is hydrogen or a straight chain or branched hydrocarbonoxy radical having 1 to 6 carbon atoms, Ph- is phenyl and -Ph- is 1,4-phenylene;
and

with the proviso that the compound of formula I comprises at least one polymerizable group PG within the above given meaning,

with the proviso that the compound of the following formula

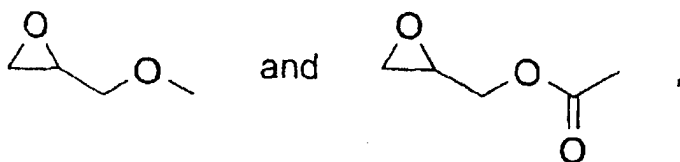


is excluded.

2. (canceled).

3. (canceled).

4. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein the polymerizable groups PG are $\text{CH}_2=\text{CY}-$, $\text{CH}_2=\text{CY}-\text{COO}-$, $\text{CH}_2=\text{CH}-\text{O}-$, $\text{CH}_2=\text{CH}-\text{OOC}-$, $\text{CH}_2=\text{CH}-\text{Ph}-\text{O}-$, $\text{CH}_2=\text{CH}-\text{Ph}-\text{OCO}-$,



wherein Y is hydrogen or methyl.

5. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein the polymerizable groups PG are $\text{CH}_2=\text{CY}-\text{COO}-$, $\text{CH}_2=\text{CH}-\text{O}-$ and $\text{CH}_2=\text{CH}-\text{OOC}-$, wherein Y is hydrogen or methyl.

6. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein rings D^1 , D^2 , D^3 , D^4 and D^5 independently of each other are unsubstituted, saturated five- or six-membered alicyclic rings or six- or ten-membered aromatic rings, which are unsubstituted, mono- or poly-substituted by fluorine or chlorine or nitro or by a straight chain or branched alkyl residue having 1-6 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by fluorine, and wherein one or more of the non-adjacent CH_2 groups may independently be

replaced by -O-, -CO-O-, -O-CO-, -NR²-CO-, -CO-NR²-, -NR²-CO-O-, -O-CO-NR²-, -CH=CH-, -C≡C-, -O-CO-O-, wherein R² represents hydrogen or lower alkyl.

7. (original): A polymerizable dichroic azo dye according to claim 6, wherein rings D¹, D², D³, D⁴ and D⁵ are unsubstituted cyclopentane-1,3-diyl, unsubstituted 1,3-dioxane-2,5-diyl, unsubstituted cyclohexane-1,4-diyl, unsubstituted naphthalene-2,6-diyl or 1,4-phenylene, which is unsubstituted, mono- or poly-substituted by fluorine or chlorine or by a straight-chain or branched alkyl residue having 1-3 carbon atoms, which alkyl residue is unsubstituted, mono- or poly-substituted by fluorine, and wherein one or more of the non-adjacent CH₂ groups may independently be replaced by -O-, -CO-O-, -O-CO-, -CH=CH-, -C≡C-.

8. (withdrawn): A polymerizable dichroic azo dye according to claim 6, wherein rings D¹, D², D³, D⁴ and D⁵ are 1,4-phenylene, which is unsubstituted, mono- or poly-substituted by fluorine, chlorine, methyl, methoxy, acyl or -CO-O-CH₃.

9. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein the S¹ and S² comprise a single bond, or a straight-chain or branched alkylene group or - (CH₂)_r-O-(CH₂)_s-, -(CH₂)_r-CO-O-(CH₂)_s-, -(CH₂)_r-O-CO-(CH₂)_s-, -(CH₂)_r-NR²-CO-(CH₂)_s-, -(CH₂)_r-NR²-CO-O-(CH₂)_s-, -(CH₂)_r-(OCH₂CH₂)_s-(CH₂)_t- wherein r, s and t are each an integer from 1 to 20, the sum of r + s + t ≤ 21, wherein R² represents hydrogen or lower alkyl, and which are attached to the dichroic residue and the polymerizable group, respectively, such that heteroatoms are not directly linked to each other.

10. (original): A polymerizable dichroic azo dye according to claim 9, wherein S¹ and S² are a single bond or a C₁₋₁₄ straight-chain alkylene group, especially ethylene, propylene, butylene, pentylene, hexylene, heptylene, octylene, nonylene, decylene, undecylene, or dodecylene.

11. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein Sp is a single bond, or a straight-chain or branched alkylene group or $-(CH_2)_u-O-(CH_2)_v-$, $-(CH_2)_u-CO-O-(CH_2)_v-$, $-(CH_2)_u-O-CO-(CH_2)_v-$, wherein u and v are each an integer from 1 to 4, the sum of $u + v \leq 4$.

12. (original): A polymerizable dichroic azo dye according to claim 11, wherein Sp is a single bond and a C₁₋₅ straight-chain alkylene group, especially ethylene, propylene, butylene or pentylene.

13. (currently amended): A polymerizable dichroic azo dye according to claim 1, wherein Z¹, Z², Z³, Z⁴ and Z⁵ are a single covalent bond or a straight-chain or branched alkylene residue, which is unsubstituted, mono-substituted or poly-substituted by fluoro, having 1 to 8 carbon atoms, wherein one or more of the non-adjacent CH₂ groups may independently be replaced by -O-, -CO-, -CO-O-, -O-CO-, -NR²-CO-, -CO-NR²-, -NR²-CO-O-, -O-CO-NR²-, -CH=CH-, -C≡C-, -O-CO-O-, -CR²=C-CO-, wherein R² represents hydrogen or lower alkyl.

14. (currently amended): A polymerizable dichroic azo dye according to claim 13, wherein Z¹, Z², Z³, Z⁴ and Z⁵ groups are a single covalent bond or a straight-chain or branched alkylene residue, having 1 to 4 carbon atoms, wherein one or more of the non-adjacent CH₂ groups may independently be replaced by -O-, -CO-O-, -O-CO-, -CH=CH-, -C≡C-, -O-CO-O-, -CR²=C-CO-, wherein R² represents hydrogen or lower alkyl.

15. (currently amended): A polymerizable dichroic azo dye according to claim 14, wherein Z¹, Z², Z³, Z⁴ and Z⁵ are each independently selected from a group consisting of a single covalent bond, -CO-O-, -O-CO-, -CH₂-O- or -O-CH₂-.

16. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein E represents hydrogen, methyl, acetyl, acryloyl and methacryloyl, especially hydrogen, methyl and acetyl.

17. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein the sum of the integers $m^1 + m^2$ is 0 or 1.

18. (canceled).

19. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein X^1 and X^2 when linked to 1,4-phenylene or 1,4-naphthylene each independently represent a single covalent bond, -CO-O-, -O-CO-, -CH₂-O-, -O-CH₂-, -NW-, -CH₂-NW-, -NW-CH₂-, -N=CR-, -CR=N-, -NW-CO- or -CO-NW-, wherein W has the meaning given above.

20. (withdrawn): A polymerizable dichroic azo dye according to claim 1, wherein X^1 and X^2 when linked to a group of formula b), c) or d) each independently represent a single covalent bond, -CH₂-CH₂-, -O-CH₂...^(iv), -NW-CH₂...^(iv), -CH=CH-, -O-CH₂-CH₂-CH₂...^(iv) or -NW-CH₂-CH₂-CH₂...^(iv), wherein W has the meaning given above and the broken lines (iv) symbolize the linkage to the groups of formula b), c) or d).

21. (withdrawn): A polymerizable dichroic azo dye according to claim 1, wherein X^1 and X^2 when linked to a group of formula e) or f) each independently represent -CH₂-, -CO-, -CH₂-CH₂-CH₂-, -O-CH₂-CH₂...^(iv), -NW-CH₂-CH₂...^(iv), -CH=CH-CH₂...^(iv), -OCO-CH₂...^(iv) or -CH₂-OCO...^(iv), wherein W has the meaning given above and the broken lines (iv) symbolize the linkage to the groups of formula e) or f).

22. (withdrawn): A polymerizable dichroic azo dye according to claim 1, wherein V is selected from a group consisting of -CH₂-CH₂-, -CH₂-CH₂-CH₂- or -CH₂-O-CH₂-.

23. (withdrawn): A polymerizable dichroic azo dye according to claim 1, wherein M is 1,4-phenylene, which is unsubstituted, monosubstituted by chlorine or -CH₃, with the proviso that at least one of Ar¹, Ar², Ar³ or Ar⁴ is optionally substituted 1,4-naphthylene.

24. (withdrawn): A polymerizable dichroic azo dye according to claim 23, wherein M is unsubstituted 1,4-phenylene, with the proviso that at least one of Ar¹, Ar², Ar³ or Ar⁴ is 1,4-naphthylene.

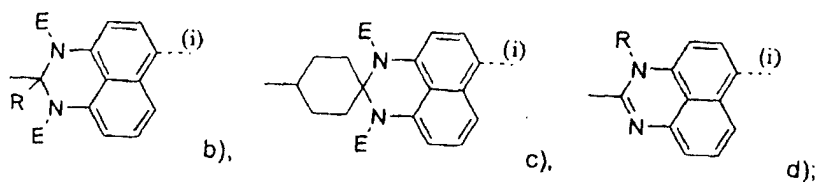
25. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein Ar¹, Ar², Ar³ and Ar⁴ independently of each other are 1,4-phenylene or 1,4-naphthylene, which are unsubstituted, mono- or disubstituted by fluorine, chlorine, -OCH₃ or -CH₃, with the proviso that at least one of Ar¹, Ar², Ar³ or Ar⁴ is optionally substituted 1,4-naphthylene if G¹ and G² are optionally substituted 1,4-phenylene.

26. (original): A polymerizable dichroic azo dye according to claim 25, wherein Ar¹, Ar², Ar³ and Ar⁴ independently of each other are 1,4-phenylene, which is unsubstituted, mono- or disubstituted by chlorine or -CH₃ or unsubstituted 1,4-naphthylene, with the proviso that at least one of Ar¹, Ar², Ar³ or Ar⁴ is unsubstituted 1,4-naphthylene if G¹ and G² are optionally substituted 1,4-phenylene.

27. (previously presented): A polymerizable dichroic azo dye according to claim 1, wherein

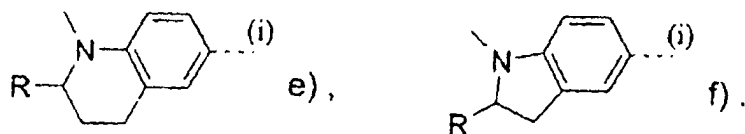
G¹ and G² independently of each other are 1,4-phenylene or 1,4-naphthylene, which are

unsubstituted, mono- or disubstituted by fluorine, chlorine, -OCH₃ or -CH₃, or a group of formula b), c) and d), which are unsubstituted and wherein the broken lines (i) symbolize the linkage to the azo-binding group and R, E have the meaning given above

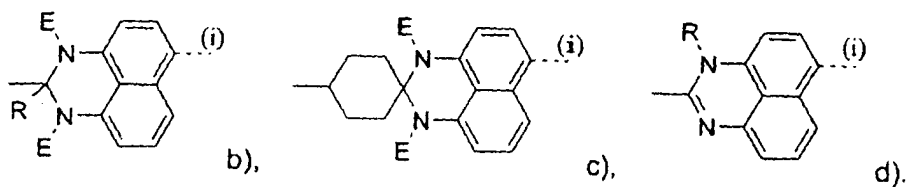


or

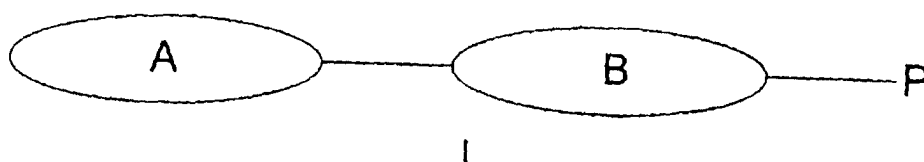
a group of formula e) and f), which is unsubstituted and wherein the broken lines (i) symbolize the linkage to the azo-binding group and R represents hydrogen or lower alkyl



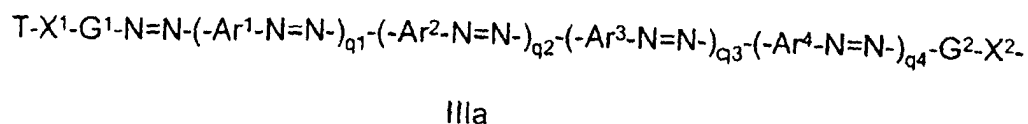
28. (previously presented): A polymerizable dichroic azo dye according to claim 27, wherein
 G^1 and G^2 independently of each other are 1,4-phenylene or 1,4-naphthylene, which are unsubstituted, mono- or disubstituted by fluorine, chlorine, $-OCH_3$ or $-CH_3$, or a group of formula b), c) and d), which are unsubstituted and wherein the broken lines (i) symbolize the linkage to the azo-binding group and R, E have the meaning given above



29. (currently amended): A polymerizable dichroic azo dye of the general formula I:

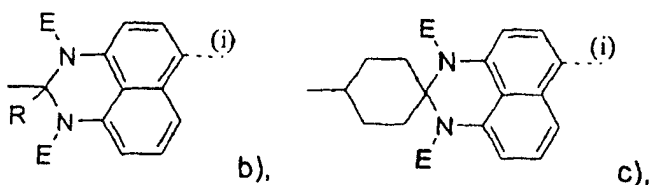


wherein A is a dichroic residue of general formula IIIa



wherein

G^1 and G^2 independently of each other represent 1,4-phenylene, which is unsubstituted, mono- or disubstituted by chlorine or $-CH_3$, or unsubstituted 1,4-naphthylene; or a group of formula b) or c)



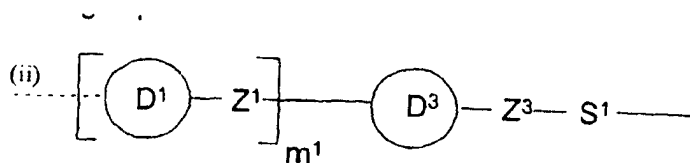
wherein the broken lines (i) symbolize the linkage to the azo-binding group; and wherein

E independently represents hydrogen, methyl and acetyl;

R independently represents hydrogen, methyl, ethyl, propyl and isopropyl;

X^1 and X^2 independently of each other represent a covalent bond, CH_2-CH_2- , $-CO-O-$, $-O-CO-$, $-CH_2-O-$, $-O-CH_2-$, $-NR-$ or $-CH_2-NR-$, $-NR-CH_2-$, $-NR-CO-$ or $-CO-NR-$, wherein R has the meaning given above;

B represents a group of substructure XXIII



XXIII

wherein the broken line (ii) symbolizes the linkage to said dichroic residue;

and wherein

$\text{Ar}^1, \text{Ar}^2, \text{Ar}^3, \text{Ar}^4$ are independently of each other 1,4-phenylene, which

is unsubstituted, mono-or disubstituted by chlorine or $-\text{CH}_3$, or unsubstituted 1,4-

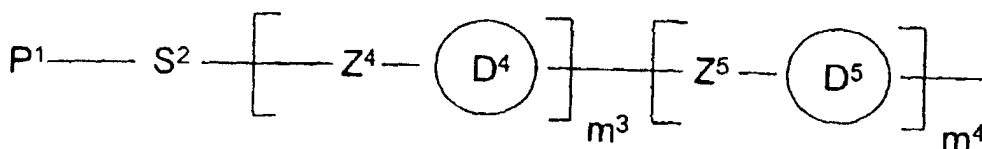
naphthylene, with the proviso that if G^1 and G^2 are optionally substituted 1,4-phenylene at

least one of $\text{Ar}^1, \text{Ar}^2, \text{Ar}^3$ or Ar^4 is unsubstituted 1,4-naphthylene;

q^1, q^2, q^3, q^4 independently are 0 or 1, with the proviso that the sum of the

integers $q^1 + q^2 + q^3 + q^4$ is 1 or 2;

T represents a group of substructure IV



IV

P and P^1 independently of each other represent hydrogen, halogeno,

cyano, nitro or a polymerizable group PG, wherein PG includes $\text{CH}_2=\text{CY}-\text{COO}-$,

$\text{CH}_2=\text{CH}-\text{O}-$ and $\text{CH}_2=\text{CH}-\text{OOC}-$, wherein Y is hydrogen or methyl;

$\text{D}^1, \text{D}^3, \text{D}^4$ and D^5 independently of each other represent 1,4-phenylene,

which is unsubstituted, mono- or poly-substituted by fluorine, chlorine, methyl, methoxy,

acyl or $-\text{CO}-\text{O}-\text{CH}_3$;

$\text{Z}^1, \text{Z}^3, \text{Z}^4$ and Z^5 independently of each other represent selected from a

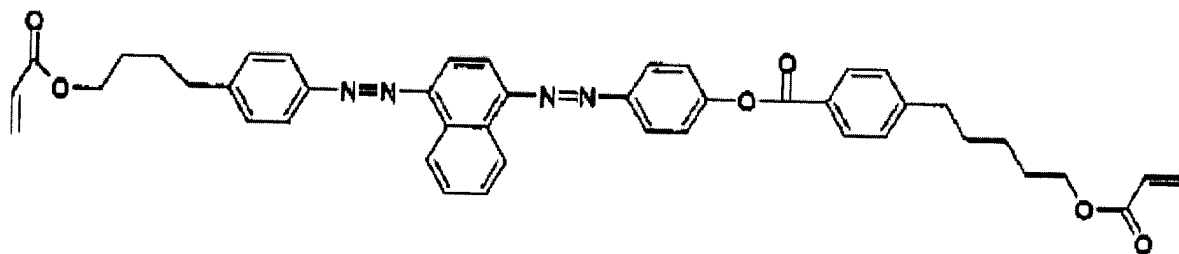
group consisting of a single covalent bond, -CO-O-, -O-CO-, -CH₂-O- or -O-CH₂-;

Z³ is -O-CH₂-;

S¹ and S² represent independently of each other a single bond, ethylene, propylene, butylene, pentylene, hexylene, heptylene, octylene, nonylene, decylene, undecylene, or dodecylene and

m¹, m³, m⁴ are independently of each other 0 or 1,

with the proviso that the compound of the following formula



is excluded.

30. (original): A polymerizable dichroic azo dye according to claim 29, wherein if G¹ and G² independently of each other represent a group of formula b) or c), X¹ and X² independently of each other represent a covalent bond or CH₂-CH₂-.

31. (withdrawn): Method for the preparation of mesogenic, polymerizable mixtures comprising polymerizing a polymerizable dichroic azo dye according to claim 1.

32. (withdrawn): A mesogenic, polymerizable mixture comprising at least one polymerizable dichroic azo dye of formula I according to claim 1.

33. (withdrawn): A mesogenic, polymerizable mixture according to claim 32, wherein the polymerizable dichroic azo dye is at a concentration of 0.01 to 50% wt.

34. (withdrawn): A mesogenic, polymerizable mixture according to claim 32 further comprising another dichroic or non-dichroic dye.

35. (withdrawn): A mesogenic, polymerizable mixture according to claim 32 further comprising at least one polymerizable liquid crystal (LCP).

36. (withdrawn): A mesogenic, polymerizable mixture according to claim 32 further comprising additives selected from the group consisting of crosslinkers, stabilizers and photoinitiators.

37. (withdrawn): A mesogenic, polymerizable mixture according to claim 32 comprising at least one dichroic dye of formula I and at least one polymerizable liquid crystal compound and optionally additives selected from the group consisting of crosslinkers, stabilizers and photoinitiators.

38. (withdrawn): A mesogenic, polymerizable mixture according to claim 32 comprising one to four dichroic dyes of formula I and at least one polymerizable liquid crystal compound comprising two polymerizable groups and optionally additives selected from the group consisting of crosslinkers, stabilizers and photoinitiators.

39. (withdrawn): Method for the preparation of dichroic liquid crystalline polymer films comprising polymerizing a mesogenic, polymerizable mixture according to claim 32.

40. (withdrawn): A dichroic liquid crystalline polymer film comprising a mesogenic, polymerizable mixture according to claim 32.

41. (withdrawn): Method for the manufacture of a polarizer or optical filter comprising incorporating a dichroic liquid crystalline film according to claim 40 into a polarizer or optical filter.

42. (withdrawn): Process of preparing a dichroic liquid crystalline polymer film comprising a mesogenic, polymerizable mixture according to claim 32 comprising (i) preparing a solution of said mixture, (ii) applying said solution to a substrate by different coating techniques,

(iii) evaporating the solvent to obtain a film, and (iv) polymerizing said film using UV light to give said dichroic liquid crystal film.

43. (withdrawn): Process according to claim 42, wherein the dichroic liquid crystal films are further coated with protective layers for protection against oxygen, UV irradiation or mechanical stress.

44. (withdrawn): Process according to claim 42, wherein the substrates include transparent substrates which are glass or plastic, including an orientation layer.

45. (withdrawn): Process according to claim 44, wherein said orientation layer includes rubbed polyimide, polyamide or a layer of photo-orientable material.

46. (withdrawn): Process according to claim 45, wherein said photo-orientable orientation layers are Linearly Photopolymerizable Polymers (LPP).

47. (withdrawn): Multilayer systems formed from stacks of alternating LPP and LCP layers, wherein at least one of the LCP layers is a dichroic LCP film according to claim 40, and which are optionally covered by protecting layers against oxygen or humidity or layers for protection against ultraviolet radiation.

48. (withdrawn): Process of preparing a dichroic liquid crystalline polymer film comprising a mesogenic, polymerizable mixture according to claim 32 comprising (i) preparing a solution of said mixture, (ii) admixing said solution with a photo-orientable material, (iii) evaporating the solvent to obtain a film, and (iv) polymerizing said film using UV light to give said dichroic liquid crystal film.

49. (withdrawn): Method for the preparation of electro-optical and optical devices including security devices comprising polymerizing a mesogenic, polymerizable mixture

according to claim 32 to form a polymer, and preparing the electro-optical and optical devices with the polymer.

50. (previously presented): Method for the preparation of electro-optical and optical devices including security devices comprising incorporating a dichroic liquid crystalline polymer film according to claim 40 into electro-optical and optical devices including security devices.

51. (withdrawn): Electro-optical or optical component or a security device comprising a dichroic liquid crystalline polymer film formed from a mesogenic, polymerizable mixture according to claim 32.

52. (withdrawn): Orientation layer comprising at least one polymerizable dichroic azo dye according to claim 1.

53. (withdrawn): Orientation layer according to claim 52 further comprising rubbed polyimide, polyamide or a layer of photo-orientable material.

54. (withdrawn): Method for the manufacture of optical or electro-optical components selected from the group consisting of structured and unstructured optical filters, polarizers and elements of security devices, comprising incorporating an orientation layer according to claim 52 in optical or electro-optical components selected from the group consisting of structured and unstructured optical filters, polarizers and elements of security devices.